IN THE CLAIMS

Please amend the claims as follows. Any other difference between the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) A system for measuring temperatures of a device, comprising:

a dual diode system [[,]] comprising a first junction diode and a second junction diode, wherein the first junction diode and the second junction diode are collocated on a first substrate, the dual diode system having (i) a first terminal that is coupled to a first electrode of the first junction diode, wherein the first electrode of the first junction diode has a first polarity, (ii) a second terminal that is coupled to a first electrode of the second junction diode, wherein the first electrode of the second junction diode has the first polarity, and (iii) a third terminal that is coupled to second electrodes of the first and second junction diodes, wherein the second electrodes of the first and second junction diodes have a second polarity that is opposite of the first polarity;

a temperature measurement circuit that is ~~formed~~ located on a second substrate and that is configured to perform a voltage measurement by measuring two voltages that result after successively applying two different currents to a single junction diode through a single terminal, [[;]] wherein the single junction diode is one of the first junction diode [[or]] and the second junction diode, and wherein the single terminal is one of the first terminal [[or]] and the second terminal; and

a bias circuit that is configured to bias the third terminal.

2. (Currently Amended) A system for measuring temperatures of a device, comprising:

a dual diode system [[,]] comprising a first junction diode of a first transistor and a second junction diode of a second transistor, [[;]] wherein the first transistor and the second transistor are collocated on a first substrate, wherein the first transistor and the second transistor are of a same transistor type, and wherein the dual diode system ~~having~~ has (i) a first terminal coupled to an emitter of the first transistor, (ii) a second terminal coupled to an emitter of the second transistor, and (iii) a third terminal coupled in common with a base of the first transistor and a base of the second transistor;

a temperature measurement circuit that is ~~formed~~ located on a second substrate and that is configured to (i) perform a first voltage measurement at a single terminal after applying a first current to a single junction diode through the single terminal and [[to]] (ii) perform a second voltage measurement at the single terminal after applying a second current to the single junction diode through the single terminal, [[;]] wherein the single junction diode is one of the first junction diode [[or]] and the second junction diode, and wherein the single terminal is one of the first terminal [[or]] and the second terminal; and

a bias circuit that is configured to bias the third terminal.

3. (Currently Amended) The system of claim 1, wherein:

the first electrode of the first junction diode comprises a cathode; [[,]]

the first electrode of the second junction diode comprises a cathode; [[,]] and

each of the second electrodes of the first and second junction diodes [[each]] comprises an anode.

4. (Currently Amended) The system of claim 1, wherein the bias circuit is ~~formed~~ located on the first substrate.

5. (Currently Amended) The system of claim 1, wherein the bias circuit is ~~formed~~ located on one of the second substrate, a third substrate, and a discrete component.

6. (Currently Amended) The system of claim 1, wherein the temperature measurement circuit is configured to perform [[a]] the voltage measurement using the third terminal.

7. (Currently Amended) The system of claim 1, wherein:

the temperature measurement circuit is configured to perform [[a]] the voltage measurement by using only the first terminal in response to the two currents applied to the first terminal at different times; [[,]] and ~~wherein~~

the temperature measurement circuit is configured to determine [[s the]] a junction temperature of the first junction diode.

8. (Currently Amended) A method for measuring [[the]] a temperature of a device, comprising:

~~collocating~~ providing a dual diode system on a first substrate, wherein the dual diode system comprises (i) a first terminal that is coupled to a first electrode of a first junction diode, wherein the first electrode of the first junction diode has a first polarity, (ii) a second terminal that is coupled to a first electrode of a second junction diode, wherein the first electrode of the second junction diode has the first polarity, and (iii) a third terminal that is coupled to second electrodes of the first and second junction diodes, wherein the second electrodes of the first and second junction diodes have a second polarity that is opposite of the first polarity, and wherein the first junction diode and the second junction diode are collocated on the first substrate;

~~forming~~ providing a temperature measurement circuit on a second substrate;

performing a voltage measurement by measuring two voltages at a single terminal after successively applying two different currents to the single terminal such that the two different currents are applied to a single junction diode, [[;]] wherein the single junction diode is one of the first junction diode [[or]] and the second junction diode, [[and]] wherein the single terminal is one of the first terminal [[or]] and the second terminal, and wherein the voltage measurement is performed using the temperature measurement circuit; and

biasing the third terminal.

9. (Currently Amended) The method of claim 8, wherein:

the first electrode of the first junction diode comprises an emitter; [[,]]

the first electrode of the second junction diode comprises an emitter; [[,]] and

each of the second electrodes of the first and second junction diodes [[each]] comprises a base.

10. (Currently Amended) The method of claim 8, wherein:

the first electrode of the first junction diode comprises a cathode; [[,]]

the first electrode of the second junction diode comprises a cathode; [[,]] and

each of the second electrodes of the first and second junction [[s]] diodes [[each]] comprises an anode.

11. (Currently Amended) The method of claim 8, wherein [[the]] biasing the third terminal is performed using a bias circuit that is ~~formed~~ located on the first substrate.

12. (Currently Amended) The method of claim 8, wherein [[the]] biasing the third terminal is performed using a bias circuit that is ~~formed~~ located on one of the second substrate, a third substrate, and a discrete component.

13. (Currently Amended) The method of claim 8, wherein the couplings between the electrodes and the terminals are connections.

14. (Original) The method of claim 8, wherein the temperature measurement circuit comprises a differential analog-to-digital converter.

15. (Currently Amended) A system for measuring [[the]] a temperature of a device, comprising:

a dual diode system comprising a first junction diode means and a second junction diode means, wherein the first junction diode means and the second junction diode means are collocated on a first substrate, wherein the dual diode system comprises (i) a first terminal that is coupled to a first electrode of the first junction diode means, wherein the first electrode of the first junction diode means has a first polarity, (ii) a second terminal that is coupled to a first electrode of the second junction diode means, wherein the first electrode of the second junction diode means has the first polarity, and (iii) a third terminal that is coupled to second electrodes of the first and second junction diode means, wherein the second electrodes of the first and second junction diode means have a second polarity that is opposite of the first polarity;

~~forming a~~ means for measuring a signal located on a second substrate;

means for performing a voltage measurement at a single terminal after successively applying two different currents to the single terminal such that the two different currents are applied to a single junction diode means, [[;]] wherein the single junction diode means is one of the first junction diode means [[or]] and the second junction diode means, wherein [[and]] the single terminal is one of the first terminal [[or]] and the second terminal, and wherein the voltage measurement is performed using the ~~signal measuring~~ means for measuring; and

means for biasing the third terminal.

16. (Currently Amended) The system of claim 15, wherein:

the first electrode of the first junction diode means comprises an emitter; [[,]]

the first electrode of the second junction diode means comprises an emitter; [[,]] and

each of the second electrodes of the first and second junction diode means [[each]] comprises a base.

17. (Currently Amended) The system of claim 15, wherein:

the first electrode of the first junction diode means comprises a cathode; [[,]]

the first electrode of the second junction diode means comprises a cathode; [[,]] and

each of the second electrodes of the first and second junction [[s]] diode means [[each]] comprises an anode.

18. (Currently Amended) The system of claim 15, wherein the means for biasing the third terminal comprises a bias circuit that is ~~formed~~ located on the first substrate.

19. (Currently Amended) The system of claim 15, wherein the means for biasing the third terminal comprises a bias circuit that is ~~formed~~ located on one of the second substrate, a third substrate, and a discrete component.

20. (Currently Amended) The system of claim 15, wherein the ~~signal measuring~~ means for measuring is configured to perform [[a]] the voltage measurement using different currents on the same junction diode means.